to become thickened in these, and the circulation arrested in them, in consequence of the exosmosis of the liquid portions. The circulation in the lungs of a frog may be instantly arrested, over a limited space, by the application of a drop of glycerine, and in a few minutes by a drop of syrup. Experiments made on the fœtus of the salmon, and on the circulation of plants, have furnished similar results. 5. Many hundred experiments were tried with the endosmometer, having various substances (the pericardium of the sheep being the most suitable) for its diaphragm, and it resulted that the water of the blood, charged with the salts of the serum, first passed into the saccharine solution, next the albumen, and then the colouring matter. The passage of all these elements took place in a short time, when only a small portion of the osmogenous substance lay on the diaphragm; but the passage of the albuminoid elements becomes slow in proportion as the quantity of the saccharine fluid is considerable, so that, for a long time, the water containing the salts is then all that passes through. 6. Development is also impeded by saccharine solutions, as is shown by experiments made with muscular tissue macerated in them, and by those instituted on the fertilized ova of fish. 7. The following physiological and pathological circumstances are elucidated by the foregoing investigation: (*a*.) Infusoria, the excessively thin envelop of which is very sensible of osmotic action, can neither live nor become developed in fruits impregnated with sugar, as plums or grapes; but insects with their thicker integument may become developed in apples, plums, etc. Doubtless, it is by the thickness of its envelop that the cysticercus is protected from the osmotic action of the glucose in the liver. (*b*.) The antiseptic and preservative power of sugar, known for so long a period, may be explained by its power of arresting the development of organized beings. (*c*.) The thirst induced by the ingestion of sugar is due to the exosmosis of the serosity of the blood. (*d*.) The abundance of glucose in diabetes explains the characteristic thirst in this disease, and the impossibility of any serous effusion. (*e*.) The coincidence of gangrene with diabetes has been frequently observed, and may not the arrest of circulation, leading to gangrene, be attributed to the existence of glucose in the vicinity of the capillaries? (*f*.) The absence of venereal desires and of procreative power observed in the diabetic may be due to the presence of glucose in the semen—this substance in the experiments causing the immediate death of spermatozoa. (*g*.) Small quantities of sugar induce an exosmosis of the gastric juice, and thus powerfully aid digestion in some persons; while large quantities introduced into the blood increase the osmotic power of the fluid; and this explains the utility said to have been derived from the exhibition of sugar in dropsies. (*h*.) The advantageous employment of glycerine as a dressing in gangrene, hospital gangrene, etc., is explained by the impossibility of the development of organisms in pure glycerine. Purulent and other serosities are resorbed by the glycerine; and the utility of the application of this substance to dry surfaces arises from the osmosis establishing a greater humidity. (*i*.) Various experiments have been undertaken in reference to the local production of tubercle by the injection of osmogenous substances, and especially saccharine substances, into the pulmonary vesicles. The results, which, when more multiplied, will be published, give good reason for the belief in the production of localized tubercles in the lung by the exudation (exosmosis) of plastic matters, independently of diathesis. These experiments bring the subject back to its original starting-point—the accidental production of tubercles in diabetes, in which affection all the tissues are impregnated with glucose. These inquiries open a new field to therapeutics, in explaining the (in the author's belief) frequent spontaneous or artificial cure of tubercles of the lung, when these are independent of diathesis.—*Med. Times and Gaz.*, Jan. 12, 1861, from *Archives Générales*, tom. xvi.

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2. *Experiments on some of the various Circumstances influencing Cutaneous Absorption.*—WALLER'S researches on cutaneous absorption lead to results which appear to us important with regard to practical medicine. The subjects of the experiments were guinea-pigs and albino rats. When the leg of a half-grown guinea-pig was immersed into a mixture of equal parts of chloroform and tincture of aconita, the part was after fifteen minutes insensible, and the symp-

toms of poisoning by aconite soon followed—viz., nausea, efforts at vomiting, coldness of surface, weak circulation, laborious respiration, slight convulsive symptoms, and death. The immersion in simple tincture of aconite without chloroform did not cause any of the symptoms of poisoning. If, however, the sciatic nerve had been previously divided, then the immersion of the leg in the simple tincture of aconite was sufficient to poison the animal, evidently through the distension of the capillaries and the more rapid flow of blood caused by the division of the nerve. A ligature placed round the limb before the first symptoms of poisoning had appeared, prevented the toxic influence on the system, but it rarely did so after the appearance of the earliest symptoms. In albino rats the immersion of the leg in a solution of atropia in chloroform caused dilatation of the pupils already after two minutes and a half in young animals, after five minutes or later in old animals. If turpentine was substituted for chloroform, the dilatation of the pupils did not occur while the leg remained immersed in the fluid, but appeared immediately after the removal of the limb. The substitution of alcohol for chloroform as a solvent causes great retardation of absorption. An immersion of twenty to thirty minutes produced only very slight effects. Still more slow is the absorption when the atropia is dissolved in water with a slight addition of acetic acid, or when the watery extract of belladonna is rubbed over the leg. The immersion of the foot of a young rat in a solution of morphia in chloroform caused after about five minutes somnolency and great dilatation of pupils, which latter phenomenon certainly must appear very remarkable when we consider the effect of morphia, given in the usual way, on the pupil. Three minutes' immersion in a solution of strychnia in chloroform produced dilatation of the pupil, and after five minutes, the well-known symptoms of strychnia-poisoning manifested themselves. No effect was obtained when a solution of strychnia in alcohol was employed. These experiments clearly show how important is the choice of the menstruum in the endermic application of some medicinal substances.—*B. and F. Med.-Chir. Rev.*, January, 1861, from *Proceedings of Royal Society*, vol. x.

3. *Excretion of Kreatinin and Kreatin through the Urine.*—Schottin, having during several years bestowed much attention on the circumstances under which kreatin and kreatinin appear in the urine, considers that these substances are chiefly derived from the tissue-change of the striped muscles. The author inclines to the view, that kreatin and kreatinin pass by further oxidation into urea. In healthy urine he found, while merely vegetable food was consumed, no kreatin or kreatinin, and only a very small quantity under the influence of an almost entirely animal diet. In many diseases, too, these substances were not found; in some pathological conditions, however, in which either the transformation of these bodies into urea appeared to be prevented (uræmia), or in which the waste of muscular tissue was increased (as in typhoid fever), the amount of kreatin excreted by the kidneys ranges between 0.2 and 1.1 grammes (about 3 to 17 grains) within the twenty-four hours.—*B. and F. Med.-Chir. Rev.*, Jan., 1861, from *Archiv f. Heilkunde*, 1860.

MATERIA MEDICA AND PHARMACY.

4. *On Indian Hemp, particularly in relation to its property of producing Sleep.*—Dr. Fronmuller first employed the Indian hemp in the case of a phthisical patient in the year 1850, and since that time he has devoted himself to the especial study of the properties of this substance. The result has been the production of a treatise founded upon the clinical observation of no less than a thousand cases in which Indian hemp was administered. This plant has been very much extolled by many practitioners in various countries, but has lately fallen into disuse, owing to the supposed uncertainty of its operation. The discredit attached to it is attributed by Dr. Fronmüller partly to the contradictory